CLAIMS

What is claimed is:

1. A method of forming a fluid ejecting device comprising:

forming a plurality of fluid drop generators on a first surface of a silicon substrate having a <100> crystalline orientation;

forming a fluid slot mask on a second surface of the silicon substrate;

deep reactive ion etching the second surface of the silicon substrate to form a partial fluid slot that does not extend to the first surface; and

aniosotropically wet etching the partial fluid slot to form a fluid slot that extends from the second surface to the first surface and which has an opening at the first surface having a width W1 that is less than a width W2 of an opening at the second surface.

2. The method of claim 1 wherein forming a fluid slot mask comprises:

forming a layer of oxide on the first surface; and

etching a fluid slot mask opening in the layer of oxide.

3. The method of claim 1 wherein the deep reactive ion etching forms a partial fluid slot that extends from the second surface to at least half the distance between the second surface and the first surface.

4. The method of claim 1 wherein W1 is about 100 micrometers or less.

5. The method of claim 1 wherein W2 is about 300 microns or less.

6. The method of claim 1 wherein anisotropically wet etching the partial fluid slot comprises TMAH etching the partial fluid slot.

7. A fluid ejecting device made in accordance with the method of claim 1.

8. A method of forming an ink jet printhead comprising:

forming a plurality of fluid drop generators on a first surface of a silicon substrate;

forming an ink slot mask on a second surface of the silicon substrate;

deep reactive ion etching the second surface of the silicon substrate to form a partial ink slot that does not extend to the first surface; and

anisotropically wet etching the partial ink slot to form an ink slot that extends from the second surface to the first surface and which has an opening at the first surface having a width W1 that is less than a width W2 of an opening at the second surface.

9. The method of claim 8 wherein forming an ink slot mask comprises:

forming a layer of oxide on the first surface; and

etching an ink slot mask opening in the layer of oxide.

10. The method of claim 8 wherein the deep reactive ion etching forms a partial ink slot that extends from the second surface to about half the distance between the second surface and the first surface.

11. The method of claim 8 wherein W1 is about 100 micrometers or less.

12. The method of claim 8 wherein W2 is about 300 micrometers or less.

13. The method of claim 8 wherein anisotropically wet etching the partial ink slot comprises TMAH etching the partial ink slot.

14. An ink jet printhead made in accordance with the method of claim 8.

15. A fluid ejecting device comprising:

a silicon substrate having a <100> crystalline orientation;

a plurality of fluid drop generators formed on a first surface of said silicon substrate;

a fluid feed slot extending from a second surface of said silicon substrate to said first surface;

said fluid slot formed by deep reactive ion etching followed by anisotropic wet etching, and having an opening at the first surface having a width

W1 that is less than a width W2 of an opening at the second surface.

16. The fluid ejecting device of claim 15 wherein W1 is about 100 micrometers or less.

17. The fluid ejecting device of claim 15 wherein W2 is about 300 micrometers or less.

18. An ink jet printing device comprising:

a silicon substrate having a <100> crystalline orientation;

a plurality of ink drop generators formed on a first surface of said silicon substrate;

an ink feed slot extending from a second surface of said silicon substrate to said first surface;

said ink feed slot formed by deep reactive ion etching followed by anisotropic wet etching, and having an opening at the first surface having a width W1 that is less than a width W2 of an opening at the second surface.

19. The ink jet printhead of claim 18 wherein W1 is about 100 micrometers or less.

20. The ink jet printhead of claim 18 wherein W2 is about 300 micrometers or less.

Add A2
Add B1